

CLAIMS

1. In combination with a bioreactor having an axially elongated housing within which biofilm growth on microscope slides and beads is effected and evaluated within the housing; the improvement residing in: holder means for retaining at least one slide within the bioreactor housing to avoid disruption of growth of the biofilm on the beads therein, and wherein the holder means is inserted, retained and retraction from the bioreactor in order to remove a slide therefrom.
2. The combination as defined in claim 1, further including actuating means for extending into the holder means for retraction of the holder means from the bioreactor.
3. The combination as defined in claim 1, further including a port means connected to the bioreactor for evaluation of the biofilm without disruption of the biofilm.
4. The combination as defined in claim 1, including: an inlet means connected to a test chamber of the housing for aeration, an inlet means connected to a test chamber of the housing for infeed of nutrients and an outlet means.
5. The combination as defined in claim 1, wherein the axially elongated housing of the bioreactor has a length to width ratio of a magnitude to aerate the slides and beads, wherein the ratio is of from 10:1 to about 5:1.

6. The combination as defined in claim 1, wherein the surface area to volume is obtained between surface area of a housing chamber in the bioreactor, on the slides and on the beads, and volume of a quantity of liquid in the housing chamber; and wherein said surface area to volume is at least 10 square cm per 1 ml.
7. In combination with a bioreactor having an axially elongated housing within which biofilm growth on slides and beads is effected; the improvement residing in: mid-housing section for retention of the slides within the housing to enhance said growth of the biofilm thereon.
8. The combination as defined in claim 7, further including an inlet port for aeration flow, an inlet port for liquid and an outlet port.
9. The combination as defined in claim 8, further including an inlet port for withdrawing a fluid sample for evaluation.
10. The combination as defined in claim 5, wherein the axially elongated housing has the mid-housing section; and guide means within said mid-housing section for releasably holding slides in position therein.

11. The combination as defined in claim 10, wherein the mid-housing chamber section is of rectangular cross-section formed by parallel spaced walls on which the guide means is mounted, wherein the guide means comprising: parallel spaced rods between which the slides are selectively inserted to said positions thereof.